

# NIGHT INTEGRATED TRAINING ENVIRONMENT LAB



**BUILDING # 24017**



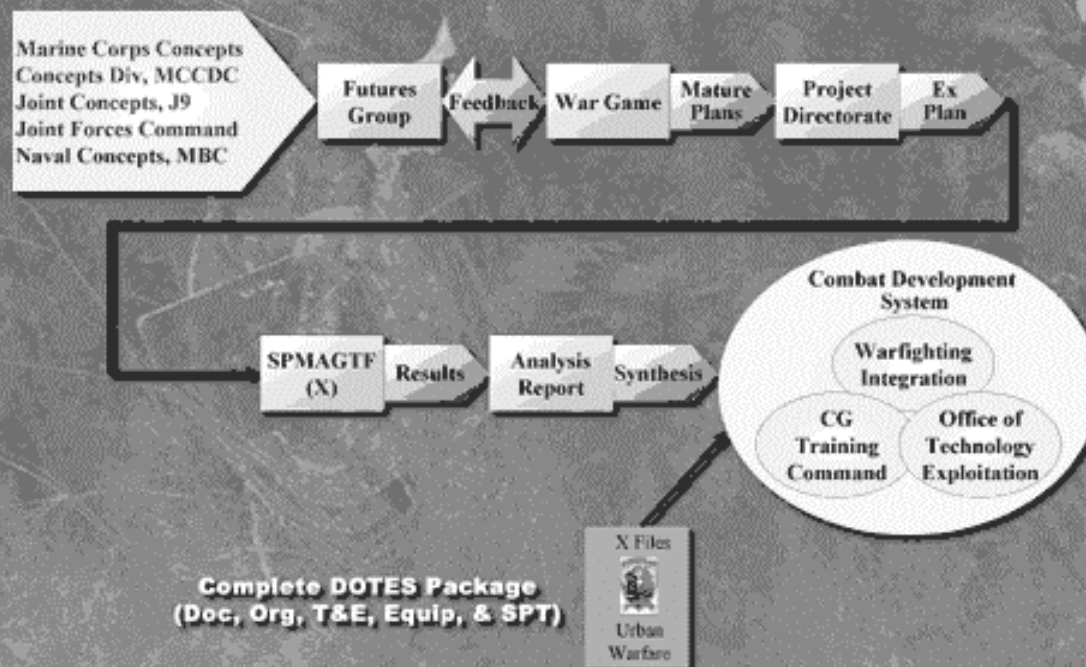
# MARINE CORPS WARFIGHTING LAB

## MISSION



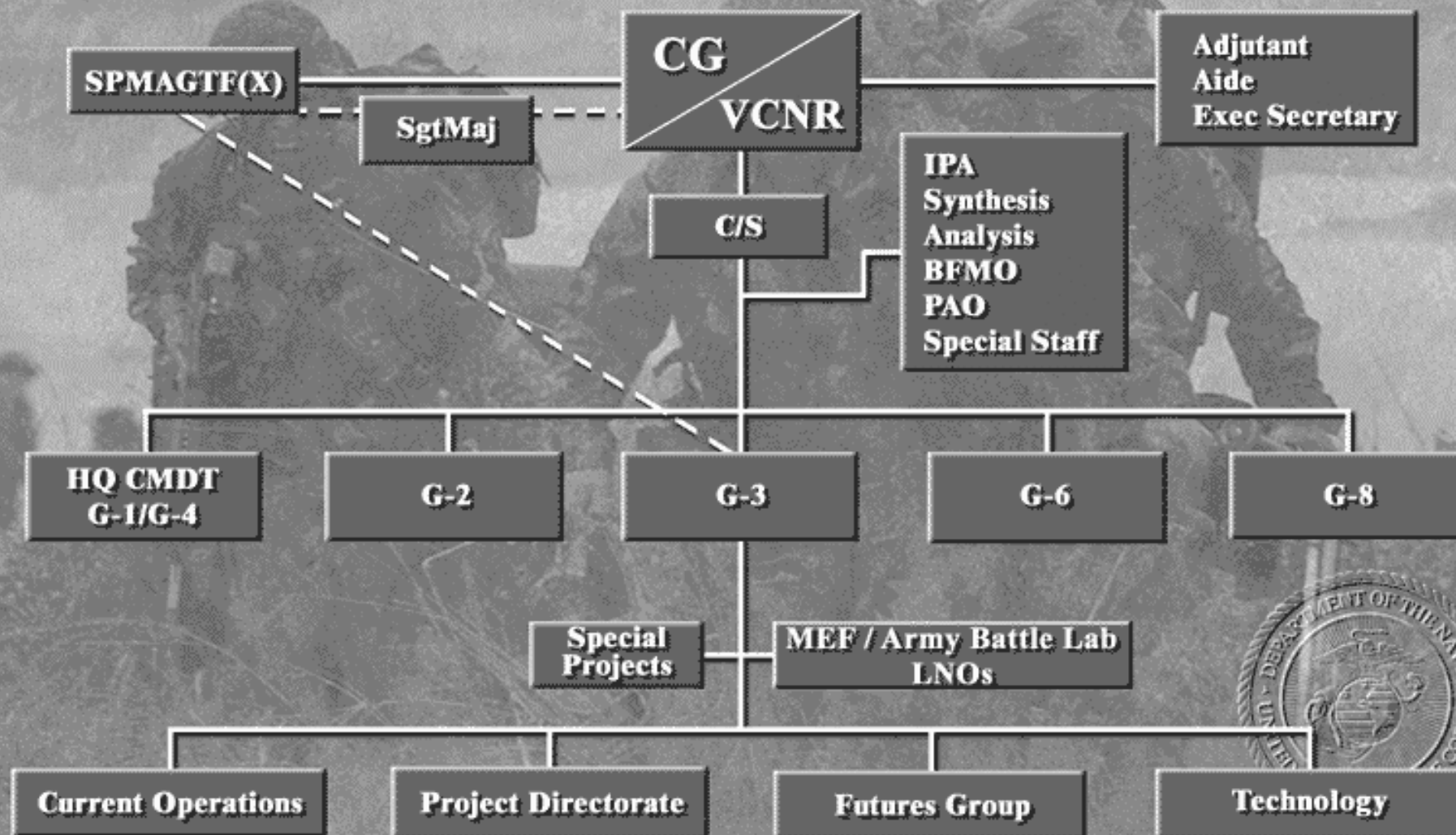
**The Marine Corps Warfighting Laboratory conducts concept based experimentation for the identification, development, and integration of operational concepts with tactics, techniques, procedures, and technologies to improve Navy and Marine Corps expeditionary capabilities, across the spectrum of conflict for the operating forces now and in the future.**

### Innovation and Experimentation Process





# MARINE CORPS WARFIGHTING LAB ORGANIZATION





# INITIAL GUIDANCE

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- ◆ **Physical characteristics**
  - ◆ **Pattern after Ft. Benning facility (day/night cameras, video monitors, obstacles, (“Gladiator Wall”).**
  - ◆ **Each lane sufficiently wide and long to train a Marine fire team (4 man fire team: Leader, Rifleman/Grenadier, two Riflemen)**
  - ◆ **Easily accessible by Quantico Marines requiring training.**
  - ◆ **Readily available parking.**



# **INITIAL GUIDANCE (cont)**

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## **◆Prototype Experiment Objective**

- ◆Serve as a prototype training facility to determine most effective configuration of like facilities to be built at Camp Lejeune and Camp Pendleton**
- ◆Serve as all weather, year around night fighting training facility.**
- ◆Familiarize a Marine Fire Team with night operations in multiple environments.**



# JOINT PROJECT

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## ◆ OFFICE OF NAVAL RESEARCH

**ONR provided money for interior configuration**

## ◆ HEADQUARTERS, U.S. MARINE CORPS

**O&M money for building**

## ◆ U.S. Army – CECOM; Night Vision- Electronic Sensor Directorate



# NITE LAB CONOPS

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- ◆ Provide a training environment that challenges a Marine Fire Team to maintain its unit integrity while maneuvering through five types of terrain/terrain features.
  - ◆ Woodland
  - ◆ Jungle
  - ◆ Desert
  - ◆ Urban
  - ◆ Interior, exterior, and a subterranean urban feature
- ◆ Provide training, as opposed to simply serving as a “nature walk” while wearing NVD’s



# TRAINING MISSION NEED

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- ◆ Marine fire teams conducting combat operations at night, when wearing Night Vision Goggles (NVGs), have to acquire and maintain a skill set for night fighting to effectively fight as a unit and survive.
- ◆ Night fighting skills are highly perishable.
- ◆ End-state is to measurably increase the Marines confidence in their ability to effectively fight as a unit at night while wearing NVGs



# EXPERIMENTATION OBJECTIVES

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- ◆ Experiment with latest technologies that accurately simulate terrain features, foliage, and light conditions for all levels of illumination.
  - ◆ Materials that stand up to wear and tear
  - ◆ Materials that allow flexibility to reconfigure training environments to adapt to desired training scenarios
- ◆ Experiment with latest technologies for interactive training
  - ◆ Video monitoring and recording of training for immediate playback to reinforce lessons learned.
  - ◆ Video monitoring to trigger booby traps, ambushes, realistic events in response to trainees failure to apply correct techniques and procedures during night ops.



# **EXPERIMENTATION OBJECTIVES (cont)**

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- ◆ **Experiment with and determine tactics, techniques, and procedures that best develop individual and unit skills needed to effectively fight at night.**
- ◆ **Experiment with different scenarios for each type of environment (Woodland, Jungle, Desert, Urban Interior, Exterior & Subterranean).**
- ◆ **Develop Program of Instruction/lesson plans**
- ◆ **Experiment with and determine what facility design, configuration, and training features best enable effective training.**
- ◆ **Determine what COTS technologies can be integrated into the NITE Lab that provide measurable added value to night fighting training.**



# NITE LAB PHYSICAL CHARACTERISTICS

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- ◆ Building is 125' x 80' x 20'
  - ◆ 20'' ceiling height is a function of the need to realistically duplicate the correct light wave lengths and color of starlight and moonlight
- ◆ Ambient night light is created by projecting correctly filtered florescent light onto a white ceiling
- ◆ Ambient light is adjusted by rheostats located in the control room
  - ◆ Adjustment range is from total darkness to a clear starry night w/full moon

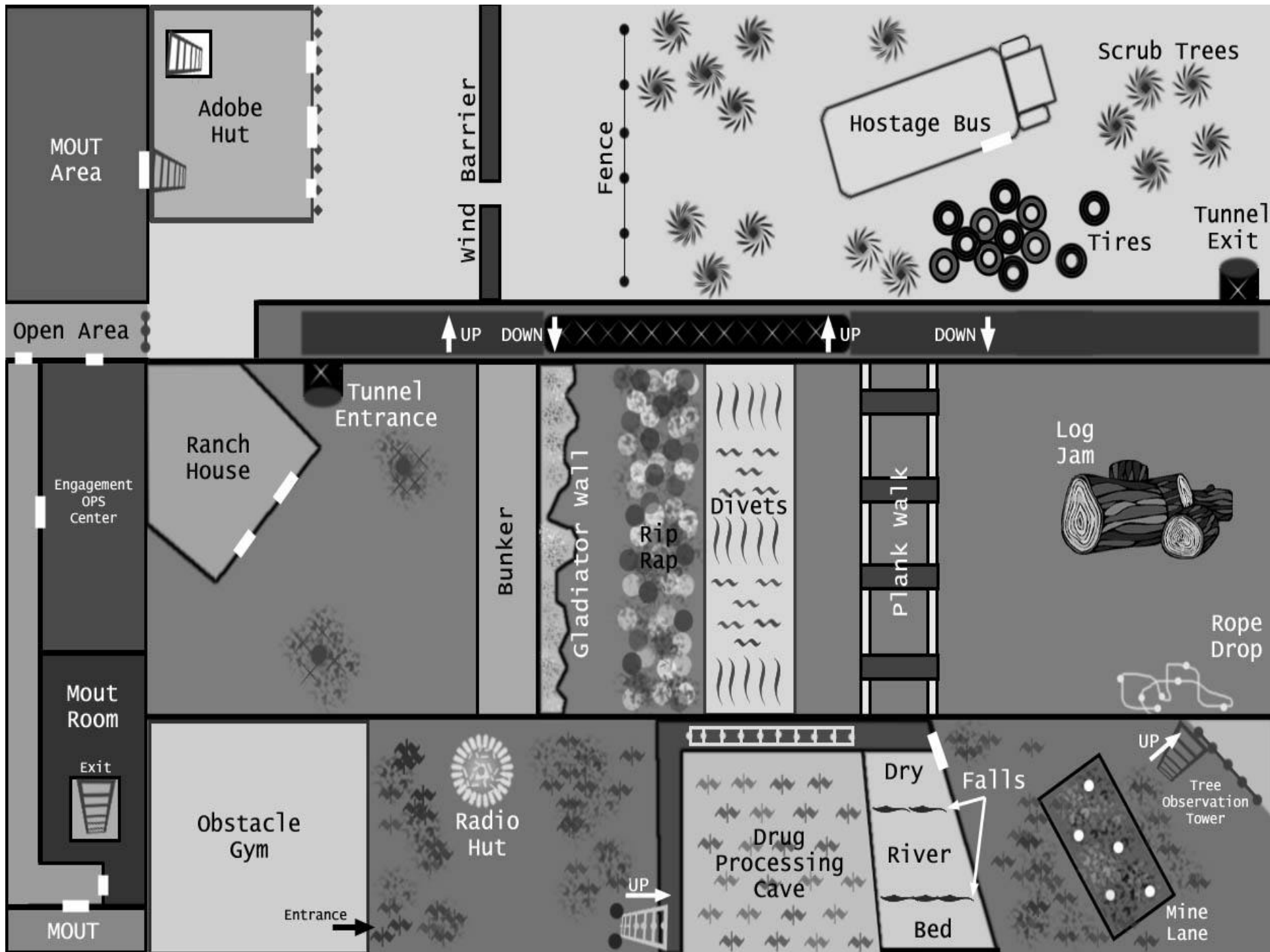


## **NITE LAB PHYSICAL CHARACTERISTICS (cont.)**

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- ◆ **Administration area has central heating and air conditioning**
- ◆ **Environmental lanes have two vent fans sized to change the air 3 times per hour**
- ◆ **Lane walls, obstacles, environmental props are modular and are moveable without having to destroy any part of the lane components, building floor, or housing itself.**
- ◆ **24 day/night cameras monitor all areas of the jungle, woodland, and desert lanes.**





# **PLANNED NITE LAB IMPROVEMENTS AND ADDITIONS (cont)**

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- ◆ **Reconfigure Saalfeld Hall**
  - ◆ **Place monitors on the end wall in banks**
  - ◆ **Make the room light tight so that the NVGs can be operated while instruction from the classroom is occurring**
- ◆ **Install cameras in the MOUT area and the subterranean urban feature along with the video monitors**



# **PLANNED NITE LAB IMPROVEMENTS AND ADDITIONS (cont)**

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- ◆ **Install sound emitters triggered by Marines executing maneuvers in the environmental lanes.**
  - ◆ **Ordnance exploding**
  - ◆ **Enemy weapons sound effects such as bolts being worked.**
  - ◆ **Sounds indigenous to the environment; i.e., jungle night sounds, desert coyotes, etc.**
- ◆ **Synthetic mulch in the jungle area**
- ◆ **Combat dummies**
- ◆ **Intelligence**



# **PLANNED NITE LAB IMPROVEMENTS AND ADDITIONS (cont)**

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- ◆ **Write lesson plans**
- ◆ **Construct scenarios for each of the lanes.**
  - ◆ **Communicate mission orders to the fire team leaders via the Inter-squad radios**
- ◆ **Installation of technologies that simulate aggressors**



# **NITE Lab PRIORITY MATRIX FOR USE**

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- ◆ **Marines attending schools at Quantico, VA**
- ◆ **Active duty Marines training for deployments**
- ◆ **Reserve Marines**
- ◆ **DoD Military Forces**
- ◆ **DoD Research and Development Agencies**
- ◆ **Non – DoD Agencies**